S/N: 10/015,165   Docket No. RAL920000118US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Jean L. Calvignac, et al.

Serial No.:   10/015,165

Filed: December 11, 2001

For: HYBRID SEARCH MEMORY FOR NETWORK PROCESSOR AND
                   COMPUTER SYSTEMS

Group Art Unit: 2164

Examiner: Chojnacki, Mellissa M.

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This correspondence is a response to the Notification of Non Compliant Appeal Brief (37 CFR 41.37) mailed 09/27/2006. In particular, this notice states that the brief does not contain a correct copy of the appealed Claims (see 7 of this notice). The notice further states, in part, "...Claims that are objected to should not be listed in the claim appendix." (See 10 of the notice).

In response appellants maintain the office appears to be wrong in its conclusion. Appellants' file contains the original Appeal brief which was E-filed to the Patent Office on September 07, 2006. A review of the Claim Appendix clearly shows only rejected Claims are contained therein. The rejected Claims are 1-4, 6-23 and 26-34 which are the only Claims in the Claim appendix. It should be noted Claims 17-18 and 20 are not only "Rejected" but also "Objected to". This could be a source of confusion which lead the Patent Appeal Center Specialist to conclude that the Claim Appendix does not contain a correct copy of the Appealed Claims. Notwithstanding, the "objected to"

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Claims 17 - 18 and 20 are also rejected and Appellant has the right to include them in the Claim Appendix. As a convenience to the Patent Office a copy of the original Claim Appendix that was E-filed is submitted herewith as Exhibition A.

If, after reviewing this response, the Office still believes the Clam Appendix does not comply with 37 CFR 41.37, Appellants respectfully request the office identify the Claims and/or other elements that should not have been included in said Claim Appendix.

In view of the above Appellants request a withdrawal of the notice and that the Brief be forwarded to the Board of Appeal.

Respectfully submitted,

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Exhibit A

Claims Appendix

1.   A search method comprising the acts of:

     II   using N bits, N being an integer, from a packet as an index into a data structure including a Direct Table with at least one entry and a tree structure operatively coupled to said one entry;

     II   setting a threshold based upon a fixed number of nodes to be traversed in the tree structure;

     II   using select bits from the packet to traverse said tree structure until the threshold is met;

     II   storing in a Contents Address Memory (CAM) at least one entry based upon a predetermined characteristic of the packet and a second predetermined characteristic of said tree structure;

     II   reading the CAM; and

     (e1)   using information at the at least one entry to access a memory location whereat action to be taken relative to the packet is stored.

2.   The method of Claim 1 wherein N includes the first sixteen bits of a Destination MAC Address.

3.   The method of claim 2 wherein the tree structure includes a plurality of nodes and leaves operatively coupled to selected nodes.

4.   The method of claim 3 further including Pattern Search Control Blocks (PSCBs) carrying search information positioned at selected nodes.

6.   The method of Claim 2 wherein the selected bits include the remaining thirty two bits of the Destination MAC Address.

7.   The method of Claim 2 wherein the second predetermined characteristic includes leaves.

8.   A method for correlating a search key with a database comprising the acts of:

(a)   using N bits, N > 1, from the search key as an index into the database including entries having a Direct Table with at least one entry and [[a]] at least one tree structure operatively coupled to said one entry;

(b)   setting a threshold based upon a fixed predefined number of nodes to be traversed in the tree structure;

(c)   using M bits (M > 1) from the search key to traverse said tree structure until the threshold is met; and

(d)   reading from a CAM information that indicates action to be taken relative to the search key.

9.   The method of claim 8 wherein the search key includes a portion of a data packet.

10.   The method of claim 9 wherein the information includes the address of a leaf in which the action is stored.

11.   The method of claim 8 wherein the reading step further includes the step of using the N bits as index into the CAM.

12.   An apparatus comprising:

an embedded processor complex including a plurality of protocol processors;

a control point processor operatively coupled to the processor complex;

a plurality of hardware accelerator co-processors accessible to each protocol processor and providing high speed pattern searching, data manipulation and frame parsing;

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at least one memory device, operatively coupled to the processor

complex, that stores data structures including a Direct Table, nodes and leaves

operatively chained together; and

a Memory location operatively coupled to the processor complex and

storing a value representative of the maximum number of nodes to be accessed

during a tree search routine.

13.   The apparatus of claim 12 further including a Contents Address Memory (CAM)

       operatively coupled to the processor complex and storing a pointer identifying a

       location whereat a leaf is stored.

14.   The apparatus of claim 13 wherein the leaf contains information on actions to be

       taken relative to a packet.

15.   The apparatus of claim 14 wherein the CAM further includes an indicia paired

       with the pointer, said indicia being selected from a portion of the packet.

16.   The apparatus of Claim 15 wherein the indicia includes a portion of a Destination

       MAC Address in the packet.

17.   The apparatus of Claim 15 further including a circuit that deletes pointers from

       the CAM based upon leaf adjustment in the tree structure.

18.   The apparatus of Claim 17 wherein the leaf adjustments include deletion.

19.   The apparatus of Claim 12 wherein the Control Point Processor is programmed

       to generate and forward frames containing information that adjusts the data

       structure.

20.   The apparatus of Claim 19 wherein the adjustment includes leaf deletion or
        insertion.

21.   A data structure comprising:

        a Direct Table having at least two entries;

        a tree structure operatively coupled to each one of the at least two entries
and having a plurality of nodes and leaves operatively chained together; and

        a storage storing a threshold value indicating a fixed predefined number of
nodes to be accessed during a walk of said tree structure.

22.   The data structure of Claim 21 further including Contents Address Memory,
        CAM, in which leaf information is stored if the leaf is connected to a node whose
        count is above the threshold value.

23.   The data structure of Claim 22 further including a co-processor responsive to at
        least a command to use part of the DA (Destination Address) of a packet to
        index into the DT (Direct Table) and the remaining part of said DA to search the
        associated tree, said co-processor selecting, information stored in a leaf if the
        leaf is attached to a node whose count is below the threshold value or selecting
        information stored in the CAM if the leaf is attached to a node above the
        threshold value.

26.   The apparatus of claim 15 further including a circuit that delete pointers from
        CAM based upon non-use of the information within a predefined time interval.

27.   The method of claim 19 wherein the adjustment includes leaf insertion.

28.   A method comprising:

        providing a data structure configured as a tree having N nodes, N >1, and
        M leaves, M >1, operatively coupled to the N nodes;

generating with a first processor a key from a packet;

setting a threshold having a value equal to a fixed predefined number of

the N nodes to be traversed;

providing in a CAM at least one entry with information relating to the key

and information relating to the data structure;

selecting, with a second processor, bits from the key and traversing the

tree based upon the bits until the threshold is met; and

reading at least one entry in the CAM to detect a location whereat action

to be taken relative to the packet is stored.

29.   The method of claim 28 further including providing a Direct Table (DT) having at
       least on entry operatively coupled to said tree.

30.   The method of claims 28 or 29 wherein information relating to the key including a
       destination address in said packet.

31.   The method of claims 28 or 29 wherein the information relating to the data
       structure includes an address where at least one of the N leaves is stored.

32.   The method of claim 28 wherein the tree walk and CAM search are being
       executed sequentially.

33.   The data structure of claim 22 further including a pointer provided in said storage,
       said pointer identifying address of said CAM.

34.   The method of claim 1 or claim 8 wherein traverse of the tree structure and CAM
       read are performed sequentially.

Related Proceedings Appendix

There are no related proceedings to this current appeal.

Evidence Appendix

This page is left intentionally blank. There is no associated evidence related material filed with this brief.